PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT
(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 00133	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)

International application No. PCT/EP 02/14776	International filing date *(day/month/year)* 27.12.2002	Priority date *(day/month/year)* 27.12.2002

International Patent Classification (IPC) or both national classification and IPC
G01C21/20

Applicant
NOKIA CORPORATION et al.

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 7 sheets, including this cover sheet.

   ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of 60 sheets.

3. This report contains indications relating to the following items:

   I   ☒   Basis of the opinion
   II   ☐   Priority
   III ☐   Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   IV   ☐   Lack of unity of invention
   V   ☒   Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   VI   ☐   Certain documents cited
   VII ☐   Certain defects in the international application
   VIII ☐   Certain observations on the international application

Date of submission of the demand 10.06.2004	Date of completion of this report 18.04.2005

Name and mailing address of the international preliminary examining authority: European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer Hoekstra, F Telephone No. +31 70 340-3638

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. **PCT/EP 02/14776**

I. Basis of the report

1. With regard to the **elements** of the international application *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17))*:

Description, Pages

7-24	as originally filed
1-6, 6a, 6b, 6c	received on 15.02.2005 with letter of 15.02.2005

Claims, Numbers

1-22	received on 15.02.2005 with letter of 15.02.2005

Drawings, Sheets

1/5-5/5	as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).

☐ the language of publication of the international application (under Rule 48.3(b)).

☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

☐ the description,   pages:

☐ the claims,   Nos.:

☐ the drawings,   sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	2-22
	No:	Claims	1
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1-22
Industrial applicability (IA)	Yes:	Claims	1-22
	No:	Claims	

2. Citations and explanations

see separate sheet

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Reference is made to the following documents:

D1:   GB-A-2 370 708 (MOTOROLA INC) 3 July 2002 (2002-07-03)

D2:   WO 01/01295 A (TELIA AB) 4 January 2001 (2001-01-04)

D3:   D3:   A.J.GRAETTINGER et al: "Evaluation of inexpensive global positioning system units to improve crash location data", Transportation Research Record 2001, nr. 1746, pg. 94-101, ISSN 0361-1981

D4:   EP-A-1160674 (NAVIGATION TECHNOLOGIES CORP.) 5 December 2001 (2001-12-05)

D5:   US-A-6023241 (CLAPPER) 8 February 2000 (2000-02-08)

(Documents D3-D5 were not cited on the International Search Report).

Added Subject-matter (Art. 34(2)(b) PCT):

1   The description pages filed 15 February 2005 contain amendments which go beyond the disclosure in the international application as filed: the expression "automatically" on p. 4, l. 13 and p. 6a, l. 20.

Assessment of prior art disclosures:

2   The discussion of document D1=GB 2370708 on p. 2, ll. 9-13, appears to be inaccurate, cf. D1, p. 6, l. 31- p. 7, l. 2. The discussion of document D2=WO01/01295 on p. 2, ll. 19 and 30, and p. 3, ll. 2 and 4, also appears to be inaccurate: D2 does not mention a laptop computer. Furthermore, document D3 also does not mention laptop computers, cf. discussion on p. 3, ll. 11 and 13. (The computer-based units in D3 appear to consist of GPS units having an external antenna connected to a notebook computer, cf. D3, p. 94, right-hand column, last paragraph).

Novelty :

3.1   The present application does not meet the requirements of Article 33(1) PCT, because the subject-matter of claim 1 is not novel in the sense of Article 33(2) PCT. The reasons for this are the following:

3.2   Document D4 discloses a method for creating a collection of selected geographical positions with the same features as independent claim 1: it uses a hand portable mobile terminal (par. [0101], GPS equipped cellular phones): the display is implicit: there is a memory for containing the selected geographical positions (see later): the position is obtained (par. [0102]): a name is assigned (par. [0102], a keyword name is entered by the user): a category is assigned (par. [0045], a subject-matter category is associated with the keyword): the obtained position is stored in the memory (par. [0102], the device then saves the keyword and data indicating the associated physical position in a local database, i.e. in a memory in the mobile device).

The "keyword" used in D4 is illustrated in par. [0016]: an example is given as the keyword "XYZDOTCOM/ABCUSER": the keyword is mentioned as being unique; keywords are therefore in fact names.

The keywords (names) assigned to geographical positions are associated with categories and possibly subcategories (par. [0045]) for the same purpose as in the present application, namely the ease of using and manipulating the stored positions (par. [0091]-[0100]).

Since D4 discloses all the features of claim 1, the subject-matter of this claim is not novel.

3.3   The subject-matter of several dependent claims is also disclosed by D4:
claims 2, 3, 15, 16: par. [0126].
claims 7-9, 11, 18, 19: par. [0010].
claim 13: par. [0125].

Inventive step:

4.1   The present application does not meet the requirements of Article 33(1) PCT,

because the subject-matter of claims **14, 22** does not involve an inventive step in the sense of Article 33(3) PCT. The reasons for this are the following:

4.2 For independent claims **14** (hand portable mobile terminal) and **22** (application), the closest prior art is considered to be D5, which discloses a hand portable mobile terminal (col. 2, ll. 7-9, the recorder 10 is palm sized to be hand held in the user's palm) having means for determining a geographical position of the mobile terminal (col. 2, l. 5, the GPS receiver 14), and a processor (col. 2, l. 34, the controller 28), a memory (col. 2, ll. 42-46, storage 32), a user interface, (col. 2, l. 10, keypad 16), and a display (col. 2, l. 16), The terminal can assume a recording mode (col. 4, ll. 1-4, and fig. 4, the recording mode is known here as "store"), and the processor stores a present geographical position in the memory when a predetermined key is pressed in the recording mode (col. 4, ll. 16, 17). (The device is a terminal because it can communicate with the outside world through infrared, cable, radio frequency, or Bluetooth, cf. col. 2, ll. 52-55. The application (software) is designated 60). Upon storing, the user is prompted for an identifier, which may be a code word, i.e. a name (col. 4, ll. 4-7).

4.3 The difference between claims **14** and **22** on the one hand, and D5 on the other hand, is therefore in providing a category for the stored position.

4.4 The problem to be solved by this difference appears to be the difficulties encountered in the device of D5 when using and manipulating the stored positions, since D5 also features a display mode in which items associated with the identifier are displayed (col. 4, ll. 20- 34). When there are many stored identifiers, there is an obvious need for manipulating them in order to retrieve the desired information.

4.5 Document D4 (discussed above in point 3.2) is concerned with similar subject-matter as D5 (associating point information to GPS positions), has the problem mentioned in point 4.3, and provides the same solution as claims **14** and **22**, namely the use of categories. The application of the teachings of D4 to the device of D5 is obvious for the person skilled in the art. Consequently, no inventive step is involved in the subject-matter of these claims.

4.6 Concerning the remaining dependent claims : the plurality of operating modes

including the recording mode, of claim **4**, is known from D5, which has a store mode and a display mode; the software application of claim **20** is also known from D5 (software 60); the subject-matter of these claims is therefore also not inventive. Claims **5, 6, 12, 17** and **21** are concerned with aspects of data analysis: the same data analysis is however already known from document D3, which discloses an apparatus, a method and an application for creating and analysing a collection of selected geographical positions: the mobile terminals are either hand held GPS-units or computer-based GPS-capable units (D3, p. 94, 95 par. "Equipment"). The application of the data analysis of D3 to the device of D5 is considered to be obvious for the person skilled in the art, so that the subject-matter of these claims is also not inventive. The subject-matter of claim **10** is known from D1, which is a system very similar to the system of D5, and which describes a mobile phone functioning as a server with a database of geographical positions, cf. D1, p. 6, ll. 16-30. Applying the server function of D1 to the system of D5 appears to be obvious, so that the subject-matter of this claim is also not inventive.

4.7 Documents D1-D5 are all close to the present application and to one another. Because of this, it is likely that the inventive step of many of the claims of the present application could be questioned using other combinations of these documents.

Method for handling location data

The present invention relates generally to handling of
5   geographical locations and more particularly to a method,
an application and a device for creating a collection of
selected geographical positions that have been visited by
the device.

10 BACKGROUND ART

US 6,459,987 discloses a method for automatically
generating a backtrack route, using the aid of Global
Positioning System technology. The method records a series
15 of data points along a traversed route. The data is used
for backtrack navigation.

US 6,477,461 discloses a navigation system for vehicles
that has a rewritable memory which stores data of a
20 plurality of locations, and searches the rewritable memory
for a target location for use in guiding a travel route.
Users can input a new location for registration manually
by specifying a new location on a map. The data of a new
location is stored in the rewritable memory in addition to
25 original data of the plurality of locations. When a user
requests a search for the target location by a name of the
target location, the navigation system searches it
alphabetically by referring to both data of the plurality
of locations and the new location. The navigation system
30 can also conduct the location search by a facility type.

DISCLOSURE OF THE INVENTION

On this background, it is an object of the present
35 invention to provide a method for creating a collection of
selected geographical positions. This object is achieved

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in accordance with claim 1 by providing a method for creating a collection of selected geographical positions using a mobile terminal having a geographical position system and a memory for containing the collection of

5   selected geographical positions, comprising the steps of:

obtaining or determining the current geographical position of the mobile terminal; and

storing the obtained position in the memory upon a user input.

10

Thus, the user can add a current geographical position of interest (at least of interest to the user) to the collection of geographical positions by the press of a button whilst being located at the position of interest.

15

The method may further include the step of adding an attribute to the saved geographical position, to facilitate retrieving positions of interest of a particular type.

20

The mobile terminal may comprise at least one key whereby the user input to save the current position is carried out by pressing the at least one key.

25 The mobile terminal preferably has a plurality of operating modes including one recording mode in which pressing the at least one key causes the current geographical position to be saved to the memory. Thus, the user merely has to carry out a single key depression to

30 register a new geographical position of interest.

The mobile terminal may have means for performing mathematical operations, whereby the method further comprises the step of performing statistical and/or

35 probability analysis on the collection of geographical positions. The mathematical analysis preferably comprise

determinations of area related density of geographical positions, preferably selectively within geographical positions with a given attribute or with attributes within a given group. Thus, areas with a particularly high density of geographical position with a given type of attribute can be determined, e.g. to facilitate avoidance of the geographical locations concerned.

The mobile terminal can be provided with means for communicating geographical position data to other terminals, whereby the method further comprises the step of the mobile terminal sending geographical positions stored in the memory to other terminals and/or receiving geographical positions from other terminals. Thus, a plurality of users can share geographical positions of interest and build up a useful collection more rapidly.

The mobile terminal can have an RF or IR receiver/transmitter (e.g. Bluetooth), whereby the method further comprises the step of sending and/or receiving selected geographical positions via an RF or IR based communication channel. Thus, the geographical positions can be exchanged without the need for a cable link.

The mobile terminal can be a mobile phone or a communicator for use in a wireless cellular communication network and capable of sending and receiving text messages, whereby the method further comprises the step of sending a text message including at least one geographical position from the memory, preferably including any associated attribute of the geographical position concerned, to one or more remote terminals. Thus, the geographical positions can be exchanged between remote users via a communication channel of the cellular network. The remote terminals can be mobile phones or communicators, and one of the mobile phones or

communicators may function as a server with a database of geographical positions. Thus, a larger collection of geographical positions can be created more rapidly.

5   The method may employ a server having a database that is connected to the cellular network and contains geographical positions received from remote terminals. Thus, a large database can be created which can be used by dedicated groups of users that need a large amount of
10   geographical position data.

The method may further comprise the step of generating a map for illustrating the result of the statistical and/or probability analysis, preferably by generating and
15   displaying a map of an area with a given density or density range of geographical positions with a given attribute or with attributes within a given group. Thus, the information contained in the collection of geographical positions can be visualized.
20

The attributes that can be attached to a geographical position can comprise a time and date stamp and/or a sound file, and/or an image file, and or a motion video file, and/or a text file.
25

It is yet another object of the present invention to provide a mobile terminal that enables users to create a collection of geographical positions in a user friendly manner. This object is achieved in accordance with claim
30   14 by providing a mobile terminal comprising means for obtaining or determining a current geographical position, a memory for storing selected geographical positions, a user interface and means for storing a current geographical position in the memory upon a user input.
35

Thus, a current geographical location that has a user's interest can readily be stored in the mobile terminal.

5 The mobile terminal preferably further compromises means for adding an attribute to the saved geographical position, so that geographical positions can be searched according to criteria related to the attributes.

The mobile terminal can further comprise a key that in at 10 least one operational mode of the mobile terminal has the functionality of saving the current geographical position to the memory, preferably with a single depression of the key.

15 The mobile terminal may further comprise means for performing statistical and/or probability analysis on the geographical positions. This allows the user to derive further information from a larger collection of geographical positions.
20

The mobile terminal can also comprise a graphical display and means for generating and displaying a map with selected geographical positions from the memory. Thus, the collection of geographical data or a selection thereof 25 through a mathematical analysis can be visualized.

The mobile terminal may further comprise an RF or IR transmitter/receiver for sending geographical positions from the memory to other terminals or receiving 30 geographical positions from other terminals, so that geographical position data can be exchanged between terminals without a cable connection.

The mobile terminal can be a mobile phone or a 35 communicator for use in a wireless cellular communication network that comprises means for sending and receiving

text messages that include at least one geographical position, and preferably include any attribute associated with the geographical position concerned. Thus, the geographical positions can be exchanged between remote

5 users via a communication channel of the cellular network.

The means for storing a current geographical position in the memory upon a user input can be a software application on the mobile terminal, preferably a downloadable

10 application.

The mobile terminal may further comprise means for generating and displaying maps for visualizing the result of the statistical and/or probability analysis.

15

It is yet another object ot the invention to provide an application for creating a collection of selected geographical positions on a mobile terminal. This object is achieved. in accordance with claim 23 by providing an

20 application, preferably a downloadable application, for creating a collection of selected geographical positions on a mobile terminal having a geographical position system and a memory for containing the collection of selected geographical positions, the application comprising means

25 for obtaining or determining the current geographical position of the mobile terminal and means for storing the obtained position in the memory upon a user input.

Further objects, features, advantages and properties of

30 the method, the mobile terminal and the application for collecting geographical positions, according to the invention will become apparent from the detailed description.

CLAIMS:

1. A method for creating a collection of selected geographical positions using a mobile terminal having a geographical position system and a memory for containing the collection of selected geographical positions, comprising the steps of:

obtaining or determining the current geographical position of the mobile terminal; and

storing the obtained position in the memory upon a user input.

2. A method according to claim 1, further comprising the step of adding an attribute to the saved geographical position.

3. A method according to claim 1 or 2, wherein the mobile terminal comprises at least one key and the user input is carried out by pressing the at least one key.

4. A method according to any of claims 1 to 3, wherein said mobile terminal has a plurality of operating modes including one recording mode in which pressing of the at least one key causes the current geographical position to be saved.

5. A method according to any of claims 1 to 4, wherein the mobile terminal has means for performing mathematical operations, further comprising the step of performing statistical and/or probability analysis on the collection of geographical positions.

6. A method according to any of claims 1 to 5, wherein the analysis preferably comprise analysis of area related density of geographical positions, preferably selectively

within geographical positions with a given attribute or
with attributes within a given group.

7. A method according to any of claims 1 to 6, wherein the
mobile terminal is provided with means for communicating
data to other terminals, further comprising the step of
the mobile terminal sending geographical positions stored
in the memory to other terminals and/or receiving
geographical positions form other terminals.

8. A method according to claim 7, wherein the mobile
terminal has an RF or IR receiver/transmitter, further
comprising the step of sending and/or receiving
geographical positions via an RF or IR based communication
channel.

9. A method according to claim 8, wherein the mobile
terminal is a mobile phone or a communicator for use in a
wireless cellular communication network and capable of
sending and receiving text messages, further comprising
the step of sending a text message including at least one
geographical position from the memory, preferably
including any associated attribute of the geographical
position concerned, to one or more remote terminals.

10. A method according to claim 9, wherein said one or
more remote terminals are mobile phones or communicators,
and one of the mobile phones or communicators functions as
a server with a database of geographical positions.

11. A method according to claim 8, wherein a server having
a database containing geographical positions received from
remote terminals is connected to the cellular network.

12. A method according to any of claims 5 to 11, further
comprising the step of generating a map for illustrating

the result of the statistical and/or probability analysis, preferably by generating and displaying a map of an area with a given density or density range of geographical positions with a given attribute or with attributes within

5   a given group.

13. A method according to any of claims 1 to 12, wherein the attribute comprises a time and date stamp and/or a sound file, and/or an image file, and or a motion video

10   file, and/or a text file.

14. A mobile terminal comprising means for obtaining or determining a current geographical position, a memory for storing selected geographical positions, a user interface

15   and means for storing a current geographical position in the memory upon a user input.

15. A mobile terminal according to claim 14, further comprising means for adding an attribute to the saved

20   geographical position.

16. A mobile terminal according to claim 14 or 15, further comprising a key that in at least one operational mode of the mobile terminal has the functionality of saving the

25   current geographical position to the memory, preferably with a single depression of the key.

17. A mobile terminal according to claim 15, further comprising means for performing statistical and/or

30   probability analysis on the geographical positions.

18. A mobile terminal according to claim 17, further comprising a display and means for generating and displaying a map with selected geographical positions from

35   the memory.

19. A mobile terminal according to any of claims 14 to 18, further comprising an RF or IR transmitter/receiver for sending geographical positions from the memory to other terminals to other terminals or receiving geographical

5   positions from other terminals.

20. A mobile terminal according to any of claims 14 to 19, the mobile terminal being a mobile phone or a communicator for use in a wireless cellular communication network and

10 comprising means for sending and receiving text messages that include at least one geographical position, and preferably include any attribute associated with the geographical position concerned.

15 21. A mobile terminal according to any of claims 14 to 22, wherein the means for storing a current geographical position in the memory upon a user input is a software application on the mobile terminal.

20 22. A mobile terminal according to any of claims 17 to 21, further comprising means for of generating and displaying maps illustrating the result of the statistical and/or probability analysis.

25 23. An application, preferably a downloadable   for creating a collection of selected geographical positions on a mobile terminal having a geographical position system and a memory for containing the collection of selected geographical positions, the application comprising:

30   means for obtaining or determining the current geographical position of the mobile terminal; and
            means for storing the obtained position in the memory upon a user input.

35